



# FLOW METERING EQUIPMENT

## Model AF Ellipse® Pitot Tube Annular Flanged Flow Meter

Preso's patented elliptical design outperforms and provides greater accuracy than traditional differential pressure flow measurement devices. This differential pressure flow meter is designed with a series of ports facing the upstream velocity pressures, as well as flow sensing ports strategically located ahead of the trailing edge flow separation.

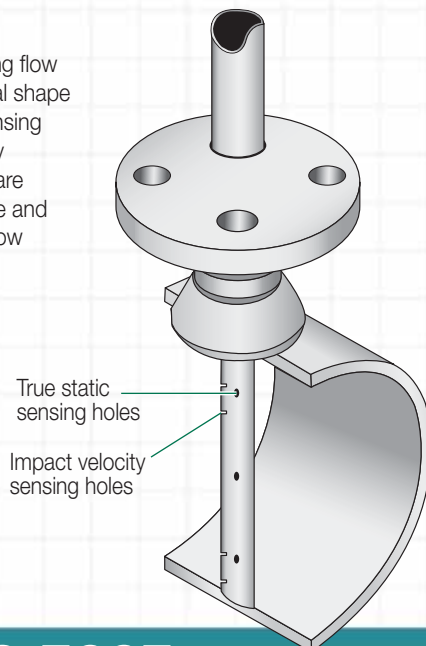
### Features

- Patented elliptical design outperforms traditional devices
- Single point pipe entry for DP, temperature and static pressure
- No dampening software required
- Lowest pressure loss in industry (typically 3% of DP in a 12" line) due to its patented aerodynamic profile
- NIST traceable calibration: Optional independent labs

### Benefits

- Accuracy:  $\pm 0.75\%$  of reading, repeatability:  $\pm 0.1\%$  of reading
- Turndown Ratio: 17:1; no vacuum effects
- No moving parts equals long, trouble-free service life
- True static pressure measurement rather than a calculated value
- Overcomes loss of accuracy caused by fluid separation at the sensor body

The multi-ported, self averaging flow element consists of an elliptical shape with two independent flow sensing chambers. The impact velocity sensing holes (high pressure) are located along the leading edge and the true static sensing holes (low pressure) are on the exterior probe side. Model AF comes with instrument shut-off valves with connections to accept a transmitter or direct indicating meter.



### Specifications

<b>Applications:</b>	Air, Liquids and Gases
<b>Pipe Sizes:</b>	2 to 72 inches (50 to 1830 mm)
<b>Pressure:</b>	Vary per flange ratings
<b>Temperature:</b>	Vary per flange ratings
<b>Accuracy:</b>	$\pm 0.75\%$ of reading
<b>Turndown Ratio:</b>	17:1 with no vacuum effect
<b>Standard Components:</b>	T-type head, 316 SS $\frac{1}{4}$ " or $\frac{1}{2}$ " FNPT connection CS 3000 lb. weld fitting – ASTM A105 316/316L SS Ellipse sensor Instrument valves (2 per sensor) – $\frac{1}{2}$ ", CS 316 SS ID tag with wire 150 lbs. 316/316L SS sensor flange CS gasket with SS spiral wound ring CS mounting flange, 150 lbs. ASTM A 105 with nuts and bolts
<b>Reynolds Number:</b>	Greater than 75,000 maintains most accurate flow measurements Less than 75,000 consult factory for estimated results
<b>Resonance:</b>	If greater than 0.8, use double support per ASME PTC 19.3

**1-800-632-7337**

**www.preso.com**

# Model AF Ellipse® Pitot Tube Annular Flanged Flow Meter

Part Number Construction: PAF0(1/2") PAF (7/8") PAF1 (1-1/4") PAF2 (2-1/4")

<b>Pipe Size (PAF/PAF0)</b> A) 2 inch B) 2-1/2 inch C) 3 inch D) 3-1/2 inch E) 4 inch F) 5 inch G) 6 inch H) 8 inch I) 10 inch J) 12 inch K) 14 inch L) 16 inch M) 18 inch N) 20 inch O) 24 inch P) 30 inch Q) 36 inch	<b>Pipe Size (PAF1/PAF2)</b> A) 12 inch B) 14 inch C) 16 inch D) 18 inch E) 20 inch F) 24 inch G) 30 inch H) 36 inch I) 42 inch J) 48 inch K) 60 inch L) 72 inch	<b>Pipe Orientation</b> A) Horizontal B) Vertical	<b>Probe Material</b> 1) 316/316L-SS 2) Monel® 3) Inconel® 4) Hastelloy® X) Other (consult factory to review application)	<b>Instrument Connection (PAF/PAF1/PAF2)</b> A) 1/2" NPT B) 1/2" Socket C) TT3 (Integral 3 Valve Trans-Mount) D) TT5 (Integral 5 Valve Trans-Mount) E) Transmitter Flange Connection <b>Instrument Connection (PAF0)</b> A) 1/4" NPT	<b>Pipe Mounting</b> 1) A105 CS 3000# 2) 316/316L SS 3000# 3) A105 CS 3000# w/Dbl Support (see below) 4) 316/316L SS 3000# w/Dbl Support Z) Not required	<b>Instrument Valve* (PAF/PAF1/PAF2)</b> A) 1/2" Needle CS B) 1/2" Needle SS C) 1/2" Gate CS D) 1/2" Gate SS Z) Not required <b>Instrument Valve (PAF0)</b> A) 1/4" Needle CS B) 1/4" Needle SS Z) Not required *NOTE: Transmitter Flange Connection Options available when Option E under Instrument Connection is selected. (consult factory for information)																																														
<b>Schedule (PAF0)</b> A) Std/40/40S B) 80/80S/XS C) 160 D) XXH E) 5S F) 10S		<b>Schedule (PAF/PAF1/PAF2)</b> A) Std G) 100 L) XXH B) 20 H) 120 M) 5S C) 30 I) 140 N) 10S D) 40 J) 160 O) 40S E) 60 K) XH P) 80S F) 80		<b>Connection</b> <table border="1"> <thead> <tr> <th>PAF0</th> <th>PAF</th> <th>PAF1</th> <th>PAF2</th> <th></th> </tr> </thead> <tbody> <tr> <td>A) 3/4"</td> <td>1-1/4"</td> <td>1-1/2"</td> <td>3"</td> <td>RF Flange 150# CS</td> </tr> <tr> <td>B) 3/4"</td> <td>1-1/4"</td> <td>1-1/2"</td> <td>3"</td> <td>RF Flange 300# CS</td> </tr> <tr> <td>C) 3/4"</td> <td>1-1/4"</td> <td>1-1/2"</td> <td>3"</td> <td>RF Flange 600# CS</td> </tr> <tr> <td>D) 3/4"</td> <td>1-1/4"</td> <td>1-1/2"</td> <td>3"</td> <td>RF Flange 900/1500# CS</td> </tr> <tr> <td>E) 3/4"</td> <td>1-1/4"</td> <td>1-1/2"</td> <td>3"</td> <td>RF Flange 150# SS</td> </tr> <tr> <td>F) 3/4"</td> <td>1-1/4"</td> <td>1-1/2"</td> <td>3"</td> <td>RF Flange 300# SS</td> </tr> <tr> <td>G) 3/4"</td> <td>1-1/4"</td> <td>1-1/2"</td> <td>3"</td> <td>RF Flange 600# SS</td> </tr> <tr> <td>H) 3/4"</td> <td>1-1/4"</td> <td>1-1/2"</td> <td>3"</td> <td>RF Flange 900/1500# SS</td> </tr> </tbody> </table>				PAF0	PAF	PAF1	PAF2		A) 3/4"	1-1/4"	1-1/2"	3"	RF Flange 150# CS	B) 3/4"	1-1/4"	1-1/2"	3"	RF Flange 300# CS	C) 3/4"	1-1/4"	1-1/2"	3"	RF Flange 600# CS	D) 3/4"	1-1/4"	1-1/2"	3"	RF Flange 900/1500# CS	E) 3/4"	1-1/4"	1-1/2"	3"	RF Flange 150# SS	F) 3/4"	1-1/4"	1-1/2"	3"	RF Flange 300# SS	G) 3/4"	1-1/4"	1-1/2"	3"	RF Flange 600# SS	H) 3/4"	1-1/4"	1-1/2"	3"	RF Flange 900/1500# SS
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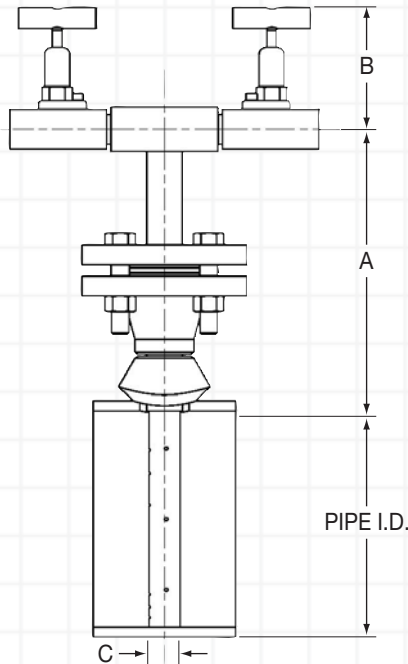
NOTE: PAF0 installs on pipe sizes 2" through 5" only (A through F options)

## Dimensions (inches)

Probe Length		
	A	B
AF0	6.62	3.13
AF	8.00	3.13
AF1	8.75	3.13
*AF2	13.92	N/A

Probe Width	
	C
AF0	.5
AF	.875
AF1	1.25
*AF2	2.25



\*AF2 probe design not pictured contact factory for more information

## Maximum Allowable DP (Inches of Water Column)

Pipe Size (inches)	Single Support Probe Size			Double Support Probe Size		
	7/8	1-1/4	2-1/4	7/8	1-1/4	2-1/4
2	880	—	—	2380	—	—
2-1/2	525	—	—	1568	—	—
3	396	—	—	1283	—	—
3-1/2	283	—	—	1117	—	—
4	197	—	—	980	—	—
5	153	—	—	757	—	—
6	126	—	—	689	—	—
8	114	360	—	512	—	—
10	100	240	779	315	960	—
12	87	175	660	250	700	—
14	53	147	610	195	585	—
16	—	113	495	—	450	—
18	—	90	410	—	360	—
20	—	74	346	—	295	—
24	—	68	315	—	270	952
26	—	50	218	—	215	878
30	—	34	187	—	155	780
32	—	—	136	—	—	550
36	—	—	105	—	—	410
42	—	—	85	—	—	350



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 Form No. 4-25-01 AF Rev. 6/07 Printed in USA